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EXAMINER

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2161

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/881,505	Applicant(s) SINHA ET AL.	
	Examiner Etienne P LeRoux	Art Unit 2161	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

Claims Status

Claims 2-31 are pending. Claim 1 has been cancelled. Claims 2-31 are rejected as detailed below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 2, 4-6, 8, 10-23, 25-27 and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by US Pat No 6,088,694 issued to Burns et al (hereafter Burns).

Claim 11:

Burns discloses a method of ensuring that a first component of a distributed system that exchanges messages belonging to a transaction with one or more other components of the distributed system is additionally aware of a state of an other component, the state being is relevant to a protocol employed with the transaction and the method comprising the steps practiced in the first component of:

- receiving an augmented one of the messages, the augmented message having been augmented by the other component to additionally contain information indicating the relevant state of the other component [Fig 4, read-only flag in the command, col 9, lines 59-65]

- retaining the relevant state from the augmented message; and using the retained relevant state to optimize the protocol [col 9, line 65 – col 10, line 4]

Claim 2:

Burns discloses the protocol ensures that the results of the transaction are consistent in the components and in the step of receiving an augmented one of the messages, the information indicating the relevant state indicates whether the transaction will modify data in the other component [col 9, line 59 – col 10 line 4].

Claim 4:

Burns discloses the distributed system is a distributed database system and the components are database systems therein [Fig 4]

Claim 5:

Burns discloses a method of ensuring that a first component of a distributed system that exchanges messages that belong to a protocol for a transaction with one or more other components of the distributed system is additionally aware of a state of an other component, the state being relevant to the protocol and the method comprising the steps practiced in the other component of determining the relevant state [col 9, line 65 – col 10, line 4] and augmenting a message sent according to the protocol with state information indicating the relevant state of the other component the first component using the state information to optimize the protocol [Fig 4, read-only flag in the command, col 9, lines 59-65].

Claim 6:

Burns discloses the relevant state indicates whether the transaction will modify data in the other component [Fig 4, col 9, line 59 – col 10, line 5]

Claim 8:

Burns discloses the distributed system is a distributed database system and the components are database systems therein [Fig 4]

Claim 10:

Burns discloses a method of executing a two-phase commit protocol for a transaction, the transaction involving a coordinator and a cohort and the method comprising the steps performed in the cohort of: augmenting a message that the cohort sends to the coordinator as part of the transaction with state information indicating whether the transaction will modify the cohort [Fig 4, read-only flag in command, col 9, lines 59-65], and responding to messages received from the coordinator as required by the commit protocol, the coordinator sending a message of the commit protocol to the cohort as determined by the state information [col 9, line 65 – col 10, and col 10, line 61 – col 11, line 9]

Claim 12:

Burns discloses the data storage device contains code which, when executed by a processor performs the method of claim 11 [Fig 4]

Claim 13:

Burns discloses the data storage device contains code which, when executed by a processor, performs the method of claim 2 [Fig 4]

Claim 14:

Burns discloses the data storage device contains code which, when executed by a processor, performs the method of claim 3 [Fig 4]

Claim 15:

Burns discloses the data storage device contains code which, when executed by a processor, performs the method of claim 4 [Fig 4]

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Claim 16:

Burns discloses the data storage device contains code which, when executed by a processor, performs the method of claim 5 [Fig 4].

Claim 17:

Burns discloses the data storage device contains code which, when executed by a processor, performs the method of claim 6 [Fig 4].

Claim 18:

Burns discloses the data storage device contains code which, when executed by a processor, performs the method of claim 7 [Fig 4].

Claim 19:

Burns discloses the data storage device contains code which, when executed by a processor, performs the method of claim 8 [Fig 4].

Claim 20:

Burns discloses the data storage device contains code which, when executed by a processor, performs the method of claim 9 [Fig 4].

Claim 21:

Burns discloses the data storage device contains code which, when executed by a processor, performs the method of claim 10 [Fig 4].

Claim 22:

Burns discloses a coordinator in a distributed system that coordinates a protocol employed with a transaction that exchanges messages with one or more other components of the distributed system, the coordinator having the improvement comprising: retained state information that retains state of an other component that is relevant to the protocol, the

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coordinator receiving a message of the protocol from the other component which has been augmented with the state information [Fig 4, read-only flag in the command, col 9, lines 59-65] retaining the state information from the augmented message in the retained state information, and using the retained state information to optimize the protocol [col 9, line 65 – col 10, line 4 and col 10, line 10, line 61 – col 11, line 9]

Claim 23:

Burns discloses the protocol ensures that the results of the transaction are consistent in the components; and the retained state information for the other component indicates whether the transaction will modify data in the other component [col 9, line 65 – col 10, line 4]

Claim 25:

Burns discloses wherein the distributed system is a distributed database system and the coordinator and the other component are database systems therein [Fig 4]

Claim 26:

Burns discloses a cohort in a distributed system, the cohort being involved in a transaction which employs a protocol that is coordinated by a coordinator and exchanging messages of the transaction with the coordinator, the cohort having the improvement comprising: a message of the protocol that is augmented with state information indicating a state of the cohort which is relevant to the protocol [Fig 4, read-only flag in the command, col 9, lines 59-65], the cohort sending the message to the coordinator and the coordinator retaining the state information and using the retained state information to optimize the protocol [col 9, line 65 – col 10, line 4 and col 10, line 10, line 61 – col 11, line 9]

Claim 27:

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Burns discloses the protocol ensures that the results of the transaction are consistent in the components; and the state information in the augmented message indicates whether the transaction will modify data in the cohort [col 9, line 59 - col 10, line 4]

Claim 29:

Burns discloses the distributed system is a distributed database system and the cohort and coordinator are database systems therein [Fig 4].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 7, 9, 24, 28, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burns in view of US Pat No 5,335,343 issued to Lampson et al (hereafter Lampson).

Claims 3, 7, 24 and 28:

Burns discloses the elements of claims 11, 2, 5, 6, 22, 23, 26 and 27 as noted above.

Burns fails to disclose the protocol is a two-phase commit protocol, the first component is the coordinator for the protocol, and in the step of using the retained relevant state to optimize the protocol the first component sends a message that aborts the transaction to an other component when the other component's state indicates that the transaction does not modify the data in the other component.

Lampson discloses the protocol is a two-phase commit protocol, the first component is the coordinator for the protocol, and in the step of using the retained relevant state to optimize

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the protocol the first component sends a message that aborts the transaction to an other component when the other component's state indicates that the transaction does not modify the data in the other component [Figs 7 and 8 and col 6, lines 25-40].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Burns to include the protocol is a two-phase commit protocol, the first component is the coordinator for the protocol, and in the step of using the retained relevant state to optimize the protocol the first component sends a message that aborts the transaction to an other component when the other component's state indicates that the transaction does not modify the data in the other component as taught by Lampson.

The ordinarily skilled artisan would have been motivated to modify Burns per the above for the purpose of improving performance when using a two-phase commit protocol [col 2, lines 45-55].

Claim 9:

Burns discloses a method of executing a two-phase commit protocol for a transaction, the transaction involving a coordinator and a cohort and the method comprising the performed in the coordinator of receiving a message of the protocol from the cohort, the message being augmented with state information indicating whether the transaction modifies the cohort's data, retaining the state information for the cohort [Fig 4, read-only flag in the command, col 9, lines 59-65, col 9, line 65 – col 10, line 4]

Burns fails to disclose if the state information for the cohort indicates that the transaction does not modify the cohort, sending an abort message of the two-phase commit to the cohort

Lampson discloses if the state information for the cohort indicates that the transaction does not modify the cohort, sending an abort message of the two-phase commit to the cohort [Figs 7 and 8 and col 6, lines 25-40]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Burns to include if the state information for the cohort indicates that the transaction does not modify the cohort, sending an abort message of the two-phase commit to the cohort as taught by Lampson.

The ordinarily skilled artisan would have been motivated to modify Burns per the above for the purpose of improving performance when using a two-phase commit protocol [col 2, lines 45-55].

Claim 30:

Burns discloses a coordinator in a distributed system that coordinates a two-phase commit protocol employed with a transaction that involves one or more cohorts in the distributed system, the coordinator having the improvement comprising: retained state information that retains state of a cohort, the state indicating whether the transaction will modify the cohort's data, the coordinator receiving a message of the protocol from the cohort which has been augmented with the state information, retaining the state information from the augmented message in the retained state information [Fig 4, read-only flag in the command, col 9, lines 59-65, col 9, line 65 – col 10, line 4].

Burns fails to disclose if the retained state information for the cohort indicates that the transaction does not modify the cohort's data, sending an abort message of the two-phase commit protocol to the cohort.

Lampson discloses if the retained state information for the cohort indicates that the transaction does not modify the cohort's data, sending an abort message of the two-phase commit protocol to the cohort [Figs 7 and 8 and col 6, lines 25-40].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Burns to include if the retained state information for the cohort indicates

that the transaction does not modify the cohort's data, sending an abort message of the two-phase commit protocol to the cohort as taught by Lampson.

The ordinarily skilled artisan would have been motivated to modify Burns per the above for the purpose of improving performance when using a two-phase commit protocol [col 2, lines 45-55].

Claim 31:

Burns discloses a cohort in a distributed system in which a coordinator in the distributed system coordinates a two-phase commit protocol employed with a transaction that involves the cohort, the cohort having the improvement comprising: a message of the protocol that is augmented with state information indicating whether the transaction will modify the cohort's data, the cohort sending the message to the coordinator and the coordinator retaining the state information [Fig 4, read-only flag in the command, col 9, lines 59-65, col 9, line 65 – col 10, line 4 and col 10, line 10, line 61 – col 11, line 9]

Burns fails to disclose if the retained state information for the cohort indicates that the transaction does not modify the cohort's data sending an abort message of the two-phase commit protocol to the cohort

Lampson discloses if the retained state information for the cohort indicates that the transaction does not modify the cohort's data sending an abort message of the two-phase commit protocol to the cohort [Figs 7 and 8 and col 6, lines 25-40]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Burns to include if the retained state information for the cohort indicates that the transaction does not modify the cohort's data sending an abort message of the two-phase commit protocol to the cohort as taught by Lampson.

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The ordinarily skilled artisan would have been motivated to modify Burns per the above for the purpose of improving performance when using a two-phase commit protocol [col 2, lines 45-55].

Response to Arguments

Applicant's arguments filed 9/9/2004, have been fully considered but are not persuasive.

Applicant Argues:

Applicant states on page 14, "The first issue is whether the link file can reasonably be characterized as an 'augmented message' as that term is used in applicant's specification. As set forth above, augmented messages are messages that "are sent from component systems to the managing system during the transaction [and] are augmented with information that indicates whether the component sending the message is currently read-only with regard to the transaction. Here, the read-only flag is not something which augments, or is added to the link file command, but is simply part of the command."

Applicant continues in the following paragraph "Next is the fact that the claim requires that the augmented message have [has] been augmented by the 'other component' that is the flow of state information is from the subordinate component to the managing component. According to col.10, line 64 – col 11, line 5 of Burns, in Burn's system the DBMS acts as the coordinator and the DLFM acts as the subordinate. The flow of state information in Burns is thus from the manager to the subordinate, or the reverse of what is set forth in claim 11."

Examiner Responds:

Examiner is not persuaded. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., augmented messages are messages that are sent from component systems to the managing system during the transaction

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[and] are augmented with information that indicates whether the component sending the message is currently read-only with regard to the transaction. Here, the read-only flag is not something which augments, or is added to the link file command, but is simply part of the command) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the flow of state information in Burns is thus from the manager to the subordinate, or the reverse of what is set forth in claim 11) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Examiner suggests the following excerpt from the Burns' disclosure is pertinent, i.e., column 9, line 40 through column 10, line 4:

FIG. 4 is a process drawing that illustrates a three-step LinkFile operation. In the first step, step (1), the file with the name filename is created in the file server 17 and accessed by the client application 80 over the file communication path 34. In step (2), the client application 80 sends a request over the SQL communication path 33 for the insertion of a record with a Datalink field containing a server/filename entry into the database stored at the database storage 16. In response to the request to insert the record, a file management API 82 in the API 40 links the file called filename by asserting control over the file; this is step (3). Control is asserted by a LinkFile command provided by a file management API 82 (one of the APIs 40) to the database agent 41 over the control communication path 42. The LinkFile command names the file, specifies a type of access control to be applied to the specified file, and conditions a read-only flag contained in the structure of the command to indicate whether or not the file is to be maintained in the read-only state.

The database agent 41 recognizes the LinkFile command and responds to it by denoting the DBMS 15 as the owner of the file in the file system, thereby preventing any file system user from renaming or moving the file. The agent 41 appropriately sets a read-only field in a file system directory according to the condition of the corresponding flag in the command. In denoting the DBMS 15 as the owner of the file at the file server 17, the LinkFile command prevents the named file from being renamed, moved, or deleted by any file system user for so long as it is linked to the database system by the reference to filename in the record inserted in step (2). This guarantees referential integrity of the reference in the inserted record.

The claim limitation(s) of concern will now be considered in detail:

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“receiving an augmented message, the augmented message having been augmented by the other component to additionally contain information indicating the relevant state of the other component.”

Referring to above disclosure by Burns it is clear that when a user requests to insert a record, a file management API 82 links the file of concern which implies control of the file. Control is asserted by a link file command. The LinkFile command names the file, specifies a type of access control and conditions a read-only file contained in the structure of the command. Therefore, the LinkFile command which includes naming the file, specifying access control and conditions a read-only flag within the command clearly reads on “augmented message indicating the relevant state (read-only status) of the other component (file stored on the file server 17, Figure 4.

Secondly the fact that the LinkFile command has been augmented by status information is supported by the disclosure by Burns that the database agent 41 recognizes the LinkFile command by appropriately setting a read-only file in a file system directory i.e., Figure 5.

Applicant Argues:

Applicant states in the first paragraph on page 15 “The cited location further explains the effect of the link file command on the file specified in the command, but discloses absolutely nothing about the use of “retained relevant state to optimize the protocol.” Further, as already pointed out, there is no disclosure whatever concerning optimization in Burns as can be seen from the fact that a Lexis search on patno = (6,088,694) and optimiz! yielded no results.”

Examiner Responds:

Examiner is not persuaded. Burns discloses in column 9, line 59 through column 10, line 5 that by including the read-only information in the message that a second user is prevented from operating on the file of concern. In particular a second user is not able to rename, move or delete such a file when it is “linked” i.e., when inserting a record by a first user who has checked out the file. This “read-only”

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status assigned to the file in the file server 17, Figure 6, ensures referential integrity of the file. The above disclosure by Burns clearly reads on "optimizing the protocol."

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Etienne LeRoux whose telephone number is (703) 305-0620. The examiner can normally be reached on Monday – Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic, can be reached on (703) 308-1436.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Etienne LeRoux

2/16/2005


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